



Med Academy

Clinical Competencies

As part of the clinical training, students must demonstrate competence in the clinical activities identified below:

- Seven mandatory general patient care activities
- Eight mandatory safety requirements
- 17 mandatory MRI Procedures and 10 elective to be selected from a list of 24 MRI procedures; and
- seven mandatory quality control tests

General Patient Care

Students must demonstrate competence in all seven patient care activities listed below. The activities should be performed on patients whenever possible, but simulation is acceptable.

General Patient Care Procedures	Pass	Failed	Date Completed	Verified By
CPR				
Vital Signs (Blood Pressure, Pulse, Respiration)				
Sterile Technique				
Standard (Universal) Precautions				
Transfer of Patient				
Care of Patient Medical Equipment (e.g. Oxygen Tank, IV Tubing)				
Venipuncture				

MRI Safety Requirements

Students must demonstrate competence in all eight areas of MRI Safety listed below.

MRI Safety Requirements	Pass	Failed	Date Completed	Verified By
Screening Patients, Ancillary personnel, and equipment				
Identify MRI Zones				
Static Field (e.g. Projectiles)				
Radiofrequency Field (e.g. SAR Levels, insulation, coil positions)				
Time Varying Magnetic Field (e.g. Induced voltages, auditory considerations)				
Patient Monitoring (egg, Sedated, pediatric, physical and/or mental compromised patients)				
Contrast Media Safety (Allergic reactions, Renal function)				
Emergency Situations (e.g. Quench, Fire, Medical Emergencies, Laser Alignment Lights)				

Quality Control Procedures

Students must demonstrate competence in all seven quality control activities listed below.

Quality Control Procedures	Pass	Failed	Date Completed	Verified By
Signal to Noise				
Center Frequency				
Transmitter Gain or Attenuation				
Geometric Accuracy				
Equipment Inspection (e.g. Coils, Table, Door Seals)				
Monitor Cryogen Levels				
Room Temperature				

MRI Procedures Requirements

Students must demonstrate competence in all 17 mandatory MRI Procedures, mandatory procedures must be performed in actual patients. Students must demonstrate competence in 10 elective procedures to be selected from a list of 24 MRI procedures; up to 5 of the 10 elective procedures can be simulated.

When performing the MRI Procedures the students demonstrate appropriate

Patient Care Skills:

- Patient Identification: Identify the patient with more than one source (name, picture ID, wrist band)
- Patient assessment and safety: patient interview, MR safety questionnaire assessment, and anti-noise devices
- Standard (Universal) precautions
- Patient communication: clear and concise directions for patient to understand and follow
- Patient monitoring: monitor the patient during procedure
- Caring disposition: demonstrate compassion and empathy for the patient's condition and vulnerable state. Exhibits understanding, knowledge and gentle care.
- Post examination follow-up: assist the patient off the table; communicate proper post-examination instruction, direct patient to dressing area/exit, and clean exam room.

MRI Skills:

- Evaluation of the doctor's order: type of exam, patient history,
- Equipment manipulation: coil selection, table, control panel, restrain devices
- Position skills: patient position, landmark selection, patient comfort
- Protocol selection: proper protocol, and pulse sequence selection depending on physician indications and patient conditions
- Anatomic coverage: demonstrate required anatomy-anatomic structures optimally
- Parameter optimization: good SNR, high resolution, good image contrast and acceptable scan time
- Performance speed: exam performed within reasonable time frame within consideration of the level of difficulty of procedure and patient condition
- Anatomy identifier: ability to identify anatomic structures in MR image

MRI Procedures List

MRI Procedure	Mandatory	Elective	Pass	Failed	Date Completed	Verified By
Head & Neck						
Brain	✓					
IAC	✓					
Neck MRA	✓					
Pituitary	✓					
Head MRA	✓					
Face/Soft Tissue Neck		✓				
Trigeminal		✓				
Posterior Fossa		✓				
Temporal Lobe		✓				
Orbit		✓				
Spine						
Cervical	✓					
Thoracic	✓					
Lumbar	✓					
Sacrum/Coccyx		✓				
Brachial Plexus		✓				
Thorax						
Chest		✓				
Breast		✓				
Heart		✓				
Thoracic MRA		✓				
Abdomen & Pelvis						
Abdomen	✓					
MRCP	✓					
Abdominal MRA		✓				
Soft Tissue Pelvis		✓				
Musculoskeletal						
Hand/Wrist	✓					
Hip	✓					
Ankle/Hind Foot	✓					
Shoulder	✓					
Fore Foot	✓					
Knee	✓					
Temporomandibular Joint		✓				
Humerus		✓				
Forearm		✓				
Femur		✓				
Lower Leg		✓				
Elbow		✓				
Finger/Thumb		✓				
Bony Pelvis		✓				
Special Imaging Procedures						
Image Post Processing	✓					
MRV		✓				
Extremity MR Angiography		✓				
Spectroscopy		✓				